



Repositionable Tapes

409 • 665 • 666 • 9415PC • 9416 • 9425PC • 9449S

Technical Data

March, 2001

Product Description	Tape 409	0.010 in. (0.25 mm) differential adhesive double coated film tape
	Tape 665	0.0035 in. (0.09 mm) differential adhesive double coated film tape – linerless
	Tape 666	0.0035 in. (0.09 mm) differential adhesive double coated film tape
	Tape 9415PC	0.002 in. (0.05 mm) High-Tack/Removable adhesive double coated film tape
	Tape 9416	0.002 in. (0.05 mm) High-Tack/Removable adhesive double coated film tape
	Tape 9425PC	0.0055 in. (0.14 mm) High-Tack/Medium-Tack double coated film tape
	Tape 9449S	0.0004 in. (0.01 mm) removable single lined acrylic laminating adhesive

Construction

Products	Tape 409	Tape 665	Tape 666	Tape 9415PC	Tape 9416	Tape 9425PC	Tape 9449S
Adhesive Type:*	R-60	400	400	400/1000 High-Tack/ Low-Tack	400/1000 High-Tack/ Low-Tack	220/400 High-Tack/ Med.-Tack	1000 Low-Tack
Adhesive Carrier:	Polyethylene	UPVC Film	UPVC Film	Polyester Film	Tissue	UPVC Film	—
Release Liner:	Tan Paper	None	White Polyethylene Film	Paper	White Paper	Tan Paper	43# Dk Paper 55# Dk Paper
Approximate Thickness: Release Liner	0.003 in. (0.08 mm)	—	0.004 in. (0.10 mm)	0.004 in. (0.10 mm)	0.006 in. (0.15 mm)	0.004 in. (0.10 mm)	.0025 in./0.032 in. (.063 mm/.080 mm)
Tape Only	0.010 in. (0.25 mm)	0.0035 in. (0.09 mm)	0.0035 in. (0.09 mm)	0.002 in. (0.05 mm)	0.002 in. (0.050 mm)	0.0055 in. (0.14 mm)	0.0004 in. (0.01 mm)
Tape Color:	White	Clear	Clear	Translucent	White	Clear	Translucent

*Face side/Back side

R-60 is a soft rubber-resin pressure-sensitive adhesive system. It features high initial adhesion and good holding power to a wide variety of materials.

400 is a medium-firm acrylic pressure-sensitive adhesive system. It features an excellent balance of good initial adhesion (quick stick) and good shear holding power.

220 is a medium-firm pressure-sensitive acrylic adhesive formulation.

100 is a low-tack, removable acrylic pressure-sensitive adhesive.

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Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Products	Tape 409	Tape 665	Tape 666	Tape 9415PC	Tape 9416	Tape 9425PC	Tape 9449S
Adhesion to Steel: (ASTM) Method							
Face side (inside)	50 oz./in. (55 N/100 mm)	25 oz./in. (27 N/100 mm)	23 oz./in. (25 N/100 mm)	15 oz./in. (16 N/100 mm)	12 oz./in. (13 N/100 mm)	45 oz./in. (49 N/100 mm)	8 oz./in.* (9 N/100 mm)
Back side (outside)	200 oz./in. (200 N/100 mm)	23 oz./in. (25 N/100 mm)	25 oz./in. (27 N/100 mm)	5 oz./in. (5 N/100 mm) adhesion to paper	3 oz./in. (3 N/100 mm) adhesion to paper	12 oz./in. (13 N/100 mm)	—
Relative High Temperature Operating Ranges:	150°F (65°C)	125°F (52°C)	125°F (52°C)	150°F (65°C)	150°F (65°C)	125°F (52°C)	150°F (65°C)
Relative Solvent Resistance:		Good	Good	Fair	Fair	Good	Fair
U.V. Resistance:		Excellent	Excellent	Good	Good	Excellent	Good
Shelf Life of Tape in Roll Form:	18 months	24 months from date of manufacture when stored in original cartons at 70°F (21°C) and 50% relative humidity.	24 months	24 months	24 months	24 months	24 months

*9449 tested with 90 degree peel using 2 mil polyester backing.

Available Sizes

Available Lengths (Subject to Minimum Order Requirements): Standard	36 yds. (32.9 m)	72 yds. (65.8 m)	72 yds. (65.8 m)	72 yds. (65.8 m)	72 yds. (65.8 m)	72 yds. (65.8 m)	72 yds. (65.8 m)
Maximum In: 1/4" to 3/8" widths		108 yds. (98.8 m)	72 yds. (65.8 m)	144 yds. (132 m)	144 yds. (132 m)	72 yds. (65.8 m)	144 yds. (132 m)
3/8" to 1/2" widths		288 yds. (263 m)	108 yds. (98.8 m)	144 yds. (132 m)	144 yds. (132 m)	144 yds. (132 m)	144 yds. (132 m)
1/2" to 2" widths		288 yds. (263 m)	108 yds. (98.8 m)	432 yds. (395 m)	360 yds. (329 m)	288 yds. (263 m)	360 yds. (329 m)
2" and greater		288 yds. (263 m)	108 yds. (98.8 m)	432 yds. (395 m)	360 yds. (329 m)	288 yds. (263 m)	360 yds. (329 m)
Available Widths (Subject to Minimum Order Requirements): Minimum	1 in. (25.4 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)
Maximum	2 in. (50.8 mm)	46 in. (1168 mm)	46 in. (1168 mm)	47 in. (1194 mm)	47 in. (1194 mm)	47 in. (1194 mm)	48 in. (1219 mm)
Normal Slitting Tolerance:	± 1/32 in. (0.8 mm)	± 1/32 in. (0.8 mm)	± 1/32 in. (0.8 mm)	± 1/32 in. (0.8 mm)	± 1/32 in. (0.8 mm)	± 1/32 in. (0.8 mm)	± 1/32 in. (0.8 mm)
Core Size (ID):	3.0 in. (76.2 mm)	3.0 in. (76.2 mm)	3.0 in. (76.2 mm)	3.0 in. (76.2 mm)	3.0 in. (76.2 mm)	3.0 in. (76.2 mm)	3.0 in. (76.2 mm)

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Application Techniques

- Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improve bond strength.
- To obtain optimum adhesion, the bonding surfaces must be clean, dry, and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane.
Note: Be sure to follow the manufacturer's precautions and directions for use when using solvents.
- Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory. An exception is 3M tape 9425PC which can be applied at temperatures as low as 32°F (0°C).

General Information

- 3M tape **409** is a differential tack, hand-tearable double coated film tape with a pressure sensitive adhesive on each side of the carrier. Faceside adhesive is medium tack to provide sufficient holding power to most clean floor surfaces yet allows easy removal on demand. Backside adhesive is very high tack to adhere to most carpet backings.
- 3M tapes **665** and **666** have a slight side-to-side adhesion differential. The adhesive on the face side (interior of roll) of 3M tape 665 is softer and has slightly higher adhesion and wet-grab than the backside (exterior of roll) adhesive.
 - Good adhesive anchorage to the film carrier can provide one-piece tape removal from many well-unified surfaces. Also, with different adhesives on each side, specific-side removal can be accomplished if applied properly.
 - The higher-grab adhesive of 3M tape 666 is the lined or back side of the tape.
- 3M tapes **9415PC** and **9416** have a low-tack adhesive on the backside (exterior of roll) which allows removal of many papers, foils, and films without adhesive residue and will not cause delamination of most paper stocks. In many cases the tape can be reused numerous times. Specific tests should be performed by the user to evaluate and determine the product's suitability for the user's particular application.
 - These adhesives will not bleed into most paper stocks which helps minimize possible discoloration or staining.
 - Flexible materials will adhere better to the low-tack adhesive than will rigid materials (e.g., paper vs. cardboard). It may also be necessary to remove curl from certain materials to avoid having them pull away from the low-tack adhesive over a period of time.
 - 3M tape 928 is identical to 3M tape 9416 for the hand-held ATG applicator.
- 3M tape **9425PC** is wound so the medium-tack ("removable") adhesive is on the backside (exterior of roll) and the high-tack ("permanent") adhesive is on the face side (interior of roll). In the case of 3M tape 9425PC, this means that the medium-tack adhesive is covered by liner and the high-tack adhesive is exposed.
 - The medium-tack adhesive allows removal of many foils and films without adhesive residue. In many cases, the tape can be reused numerous times.
 - The **linerless** feature of 3M tape 665 can help simplify manual or automatic dispensing. No special liner removal equipment is required.
- 3M tape **9449S** is a single-lined low tack laminating adhesive that allows construction of custom labels or decals without silicone on the back side of the liner. Such labels provide easier handling and consistently maintain registration on-press when printing and converting. The low tack allows easy removal of labels from substrates with little or no adhesive residue.

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Application Ideas

Removable, reusable, or reclosable uses such as:

- Reclosable bags or envelopes
 - Core starting and end tabbing of papers, foils, and films
 - Novelty items
- Removable stickers and labels
 - Point of purchase displays
 - Book inserts
 - Mounting promotional items
 - Removable/changeable advertisements
- Temporary hold for protective packaging material, such as foam or cardboard, used during shipment of manufactured goods.

Recognition/ Certification

MSDS: 3M has not prepared a MSDS for these products which are not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, these products should not present a health and safety hazard. However, use or processing of the products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

TSCA: These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit www.3M.com/bonding. Address correspondence to: 3M Bonding Systems Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-809-750-3000. In Mexico, phone: 5-728-2180.

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ISO 9002

This Bonding Systems Division product was manufactured under a 3M quality system registered to ISO 9002 standards.



Bonding Systems Division

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